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FAX TRANSMITTAL

DATE: May 21, 2009

TO: Examiner David Blanchard
FAX PHONE NO: (571) 273-8300

FROM: Anne Carlson, Ph.D.

RE: HUMANIZED ANTI-TAG 72 CC49 FOR DIAGNOSIS AND THERAPY OF HUMAN TUMORS
OUR FILE: 4239-66176-05
YOUR FILE: U.S. Patent Application No. 10/519,580

NO. OF PAGES: 7 (including this cover page)

PLEASE ACKNOWLEDGE RECEIPT BY RETURN FACSIMILE? ☒Yes ☐No

CONTACT INFO: If you do not receive all pages or if you have problems receiving transmittal, please call us at (503) 595-5300 as soon as possible and ask for Anne Carlson, Ph.D.

MESSAGE:

Dear Examiner Blanchard,

Thank you again for discussing the possibility of adding some dependent claims under 37 CFR 1.312. Attached is a set of proposed claim amendments for this case. I have also sent you the claims via email.

New claims 103-114 are added – all are dependent upon allowed composition claims.

Please call me to discuss the claims, as necessary, and to confirm if it would be appropriate to submit the amendments under 37 CFR 1.312 on or before the day the issue fee is paid, which is due Wednesday, May 27, 2009.

Best regards,
Anne

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Proposed Claim Amendments for Entry under 37 CFR 1.312
U.S. Patent Application No. 10/519,580 filed July 11, 2005
Klarquist Ref. No. 4239-66176-05
First Named Inventor: Kashmiri
HUMANIZED ANTI-TAG 72 CC49 FOR DIAGNOSIS AND THERAPY OF HUMAN TUMORS

1-19. (Canceled)

20. (Previously Presented) A humanized CC49 antibody, deposited as ATCC Accession number PTA-4182 or ATCC Accession number PTA-4183.

21-66. (Canceled)

67. (Previously Presented) A humanized CC49 antibody, comprising:

four variable light framework regions and four variable heavy framework regions of a human antibody;

a light chain complementarity determining region (L-CDR)1, a L-CDR2, a L-CDR3, a heavy chain complementarity determining region (H-CDR)1, a H-CDR2, and a H-CDR3;

a non-conservative substitution of a first residue, wherein the first residue is in the L-CDR3 of the antibody; and

a substitution of a second residue, wherein the second residue is in any L-CDR or H-CDR of the antibody;

wherein the non-conservative substitution of the first residue at position 91 is a tyrosine to proline substitution, the substitution of the second residue at position 27b is a valine to leucine substitution, the L-CDR1, L-CDR2, L-CDR3, H-CDR1, H-CDR2, and H-CDR3 are the parent HuCC49V10antibody L-CDR1, L-CDR2, L-CDR3, H-CDR1, H-CDR2, and H-CDR3, respectively, and the humanized CC49 antibody has a high binding affinity for TAG-72 and is minimally immunogenic, compared to HuCC49V10, deposited as ATCC Accession No. PTA-5416.

68. (Previously presented) A humanized CC49 antibody, comprising:

a light chain complementarity determining region (L-CDR)1, a L-CDR2, and a L-CDR3, a heavy chain complementarity determining region (H-CDR)1, a H-CDR2, and a H-CDR3, all of a parent CC49 antibody, wherein the L-CDR3 of the humanized CC49 antibody or of an antigen binding fragment of the humanized CC49 antibody comprises a non-conservative amino acid substitution at position 91 and has a high binding affinity for TAG-72, compared to the parent CC49 antibody, wherein the parent CC49 antibody is HuCC49V10, deposited as ATCC Accession No. PTA-5416.

69. (Previously Presented) The humanized CC49 antibody of claim 68, wherein the non-conservative substitution is a tyrosine to proline substitution.

70. (Previously presented) A humanized CC49 antibody, comprising:

a light chain complementarity determining region (L-CDR)1, a L-CDR2, and a L-CDR3, a heavy chain complementarity determining region (H-CDR)1, a H-CDR2, and a H-CDR3, all of a parent

CC49 antibody, wherein the L-CDR3 of the humanized CC49 antibody or of an antigen binding fragment of the humanized CC49 antibody comprises a tyrosine to proline substitution at position 91 and has a high binding affinity for TAG-72, compared to the parent CC49 antibody, wherein the parent CC49 antibody is HuCC49V10, deposited as ATCC Accession No. PTA-5416.

71. (Previously Presented) The antibody of claim 70, wherein the high binding affinity is at least about 1.2×10^{-8} M.

72. (Previously Presented) The antibody of claim 70, wherein the humanized CC49 antibody is minimally immunogenic.

73. (Previously Presented) The antibody of claim 70, wherein the humanized CC49 antibody further comprises an effector molecule.

74. (Previously Presented) The antibody of claim 73, wherein the effector molecule is a detectable label.

75. (Previously Presented) A pharmaceutical composition comprising a therapeutically effective amount of the antibody of claim 70 in a pharmaceutically acceptable carrier.

76. (Previously Presented) A method of detecting a TAG-72-expressing tumor in a subject, comprising:

contacting a sample from the subject *in vivo* or *in vitro* with the antibody of claim 70 for a sufficient amount of time to form an immune complex; and

detecting the presence of the immune complex, wherein the presence of the immune complex demonstrates the presence of the TAG-72-expressing tumor.

77. (Previously Presented) The method of claim 76, wherein the tumor is a colorectal tumor, a gastric tumor, a pancreatic tumor, a breast tumor, a lung tumor, an adenocarcinoma, or an ovarian tumor.

78. (Previously Presented) The method of claim 76, wherein the antibody further comprises an effector molecule.

79. (Previously Presented) The method of claim 78, wherein the effector molecule is a detectable label.

80. (Previously presented) A humanized CC49 antibody, comprising:

four variable light framework regions and four variable heavy framework regions of a human antibody;

a light chain complementarity determining region (L-CDR)1, a L-CDR2, and a L-CDR3 of the parent HuCC49V10 antibody, a heavy chain complementarity determining region (H-CDR)1, a H-CDR2, and a H-CDR3 of the parent HuCC49V10 antibody;

a non-conservative substitution of a residue at position 91 in the L-CDR3 of the antibody; and

a substitution of a residue at position 27b of L-CDR1 of the antibody;

wherein the humanized CC49 antibody has a high binding affinity for TAG-72 and is minimally immunogenic, compared to a parent HuCC49V10 antibody, deposited as ATCC Accession No. PTA-5416.

81. (Previously Presented) The humanized CC49 antibody of claim 80, wherein the substitution at position 91 is a proline to tyrosine substitution and the substitution at position 27b is a valine to leucine substitution.

82. (Previously presented) A humanized CC49 antibody, comprising:

four variable light framework regions and four variable heavy framework regions of a human antibody;

a light chain complementarity determining region (L-CDR)1, a L-CDR2, and a L-CDR3 of the parent HuCC49V10 antibody, a heavy chain complementarity determining region (H-CDR)1, a H-CDR2, and a H-CDR3 of the parent HuCC49V10 antibody;

a tyrosine to proline substitution at position 91 in the L-CDR3 of the antibody; and

a valine to leucine substitution at position 27b of L-CDR1 of the antibody;

wherein the humanized CC49 antibody has a high binding affinity for TAG-72 and is minimally immunogenic, compared to a parent HuCC49V10 antibody, deposited as ATCC Accession No. PTA-5416.

83. (Previously Presented) The antibody of claim 82, wherein the humanized CC49 antibody further comprises an effector molecule.

84. (Previously Presented) The antibody of claim 83, wherein the effector molecule is a detectable label.

85. (Previously Presented) A pharmaceutical composition comprising a therapeutically effective amount of the antibody of claim 82 in a pharmaceutically acceptable carrier.

86. (Previously Presented) A method of detecting a TAG-72-expressing tumor in a subject, comprising:

contacting a sample from the subject *in vivo* or *in vitro* with the antibody of claim 82 for a sufficient amount of time to form an immune complex; and

detecting the presence of the immune complex, wherein the presence of the immune complex demonstrates the presence of the TAG-72-expressing tumor.

87. (Previously Presented) The method of claim 86, wherein the tumor is a colorectal tumor, a gastric tumor, a pancreatic tumor, a breast tumor, a lung tumor, an adenocarcinoma, or an ovarian tumor.

88. (Previously Presented) The method of claim 86, wherein the antibody further comprises an effector molecule.

89. (Previously Presented) The method of claim 88, wherein the effector molecule is a detectable

label.

90. (Previously Presented) A method of treating a subject having a tumor that expresses TAG-72, comprising administering to the subject a therapeutically effective amount of the antibody of claim 20, wherein administering the therapeutically effective amount of the antibody of claim 20 inhibits the growth of the tumor or reduces the size of the tumor, thereby treating the subject.

91. (Previously Presented) The method of claim 90, wherein the administration of a therapeutically effective amount of the antibody of claim 20 does not elicit a human anti-murine antibody response in a subject.

92. (Previously Presented) The method of claim 90, wherein the antibody further comprises an effector molecule.

93. (Previously Presented) The method of claim 92, wherein the effector molecule is a toxin or a radioactive isotope.

94. (Previously Presented) A method of treating a subject having a tumor that expresses TAG-72, comprising administering to the subject a therapeutically effective amount of the antibody of claim 67, wherein administering the therapeutically effective amount of the antibody of claim 67 inhibits the growth of the tumor or reduces the size of the tumor, thereby treating the subject.

95. (Previously Presented) A method of treating a subject having a tumor that expresses TAG-72, comprising administering to the subject a therapeutically effective amount of the antibody of claim 68, wherein administering the therapeutically effective amount of the antibody of claim 68 inhibits the growth of the tumor or reduces the size of the tumor, thereby treating the subject.

96. (Previously Presented) A method of treating a subject having a tumor that expresses TAG-72, comprising administering to the subject a therapeutically effective amount of the antibody of claim 70, wherein administering the therapeutically effective amount of the antibody of claim 70 inhibits the growth of the tumor or reduces the size of the tumor, thereby treating the subject.

97. (Previously Presented) A method of treating a subject having a tumor that expresses TAG-72, comprising administering to the subject a therapeutically effective amount of the antibody of claim 80, wherein administering the therapeutically effective amount of the antibody of claim 80 inhibits the growth of the tumor or reduces the size of the tumor, thereby treating the subject.

98. (Previously Presented) A method of treating a subject having a tumor that expresses TAG-72, comprising administering to the subject a therapeutically effective amount of the antibody of claim 82, wherein administering the therapeutically effective amount of the antibody of claim 82 inhibits the growth of the tumor or reduces the size of the tumor, thereby treating the subject.

99. (Previously Presented) A pharmaceutical composition comprising a therapeutically effective amount of the antibody of claim 20 in a pharmaceutically acceptable carrier.

100. (Previously Presented) A pharmaceutical composition comprising a therapeutically effective amount of the antibody of claim 67 in a pharmaceutically acceptable carrier.

101. (Previously Presented) A pharmaceutical composition comprising a therapeutically effective amount of the antibody of claim 68 in a pharmaceutically acceptable carrier.

102. (Previously Presented) A pharmaceutical composition comprising a therapeutically effective amount of the antibody of claim 80 in a pharmaceutically acceptable carrier.

103. (New) The antibody of claim 20, wherein the humanized CC49 antibody further comprises an effector molecule.

104. (New) The antibody of claim 103, wherein the effector molecule is a detectable label, a toxin, or a radioactive isotope.

105. (New) The antibody of claim 67, wherein the humanized CC49 antibody further comprises an effector molecule.

106. (New) The antibody of claim 105, wherein the effector molecule is a detectable label, a toxin, or a radioactive isotope.

107. (New) The antibody of claim 68, wherein the humanized CC49 antibody further comprises an effector molecule.

108. (New) The antibody of claim 107, wherein the effector molecule is a detectable label, a toxin, or a radioactive isotope.

109. (New) The antibody of claim 80, wherein the humanized CC49 antibody further comprises an effector molecule.

110. (New) The antibody of claim 109, wherein the effector molecule is a detectable label, a toxin, or a radioactive isotope.

111. (New) A method of detecting a TAG-72-expressing tumor in a subject, comprising:

contacting a sample from the subject *in vivo* or *in vitro* with the antibody of claim 20 for a sufficient amount of time to form an immune complex; and

detecting the presence of the immune complex, wherein the presence of the immune complex demonstrates the presence of the TAG-72-expressing tumor.

112. (New) A method of detecting a TAG-72-expressing tumor in a subject, comprising:

contacting a sample from the subject *in vivo* or *in vitro* with the antibody of claim 67 for a sufficient amount of time to form an immune complex; and

detecting the presence of the immune complex, wherein the presence of the immune

complex demonstrates the presence of the TAG-72-expressing tumor.

113. (New) A method of detecting a TAG-72-expressing tumor in a subject, comprising:

contacting a sample from the subject *in vivo* or *in vitro* with the antibody of claim 68 for a sufficient amount of time to form an immune complex; and

detecting the presence of the immune complex, wherein the presence of the immune complex demonstrates the presence of the TAG-72-expressing tumor.

114. (New) A method of detecting a TAG-72-expressing tumor in a subject, comprising:

contacting a sample from the subject *in vivo* or *in vitro* with the antibody of claim 80 for a sufficient amount of time to form an immune complex; and

detecting the presence of the immune complex, wherein the presence of the immune complex demonstrates the presence of the TAG-72-expressing tumor.